USACHPPM
Readiness thru Health
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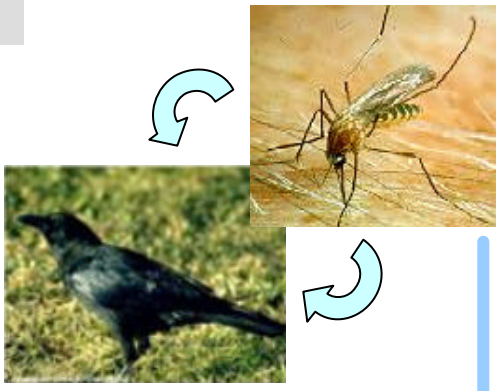
Just the Facts...

West Nile Virus



Q. ***What is West Nile virus (WNV)?***
A. West Nile virus (WNV) is a mosquito-borne virus that is commonly found in Africa, western Asia, the Middle East, and the Mediterranean region of Europe. Prior to an outbreak in the New York City area in August 1999, it had never before been documented in the Western Hemisphere. West Nile virus is closely related to St. Louis encephalitis (SLE) virus, which is routinely found in the United States (primarily the southeast and Midwest). Both of these viruses belong to the genus *Flavivirus* and they cause diseases that are similar to one another.

Q. Is West Nile virus now established in the United States?
A. Yes. In 1999, 62 human cases, including 7 deaths, occurred in the New York area. In 2000, 21 cases, including 2 deaths, were reported from 3 states. In addition to humans, WNV has been identified in a wide variety of North American species, including most commonly, birds, horses, and mosquitoes. As of October 2001, WNV has been documented in 25 states and the District of Columbia, and it continues to spread. West Nile virus does not appear to cause extensive illness in dogs or cats, and a survey of dogs and cats in New York during the 1999 epidemic showed a low infection rate.

Q. How do people get infected with West Nile virus?
A. By the bite of infectious mosquitoes (primarily *Culex* species).

Q. What is the basic transmission cycle?
A. Mosquitoes become infected by feeding on infected birds, which have virus circulating in their bloodstream for a few days. Infected mosquitoes then transmit the virus to more birds, as well as to humans and other animals, when biting them. It is NOT transmitted from person-to-person. For example, you cannot get the virus from touching or kissing a person who has the disease, or from a health care worker who has treated someone with the disease.

Q. Can you get West Nile virus directly from birds or other animals?
A. There is no evidence that a person can get WNV from handling either live or dead infected animals. However, as a general precaution, always wear gloves when handling dead animals, including dead birds, and use double plastic bags when disposing of them. Consult a veterinarian immediately if you suspect your horse, dog, cat, or other pet or livestock has been infected, and follow normal infection control precautions when caring for any animal that may have WNV or any other viral infection.

Q. Besides mosquitoes, can you get West Nile virus directly from other insects or ticks?
A. Infected mosquitoes are the primary vector, or means of transmission, for West Nile virus. Although ticks have been found infected with the virus in Asia and Africa, their ability to transmit WNV is uncertain. There is no evidence to suggest that ticks or other insects have played any role in the cases identified in the United States.

Q. What are the chances of becoming infected with West Nile virus?
A. According to the Centers for Disease Control and Prevention, even in areas where WNV has been documented, very few of the mosquitoes (less than 1%) are infected. In addition, less than 1% of individuals who are actually bitten by an infected mosquito develop severe symptoms. Therefore, a person's chance of becoming seriously ill from any one mosquito bite is extremely small.

Q. What are the symptoms of West Nile virus infection?
A. Symptoms of WNV infection generally occur after an incubation period of 3 to 15 days. Most people who are infected with WNV experience mild flu-like symptoms, which can include fever, headache, and body aches, before fully recovering. In a small number of cases, particularly among the elderly, the disease is much more serious and causes encephalitis. Encephalitis is an inflammation of the brain that develops when virus crosses the blood brain barrier and infects the central nervous system. It is marked by rapid onset of severe headache, high fever, stiff neck, disorientation, muscle weakness, paralysis, coma, and occasionally death. The case fatality rate for those with encephalitis ranges from 3% to 15%.

U.S. Army Center for Health Promotion and Preventive Medicine
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Q. Is a woman's pregnancy at risk if she becomes infected with West Nile virus?
A. There is no documented evidence that a pregnancy is at risk due to infection with WNV.

Q. Is there a treatment for West Nile virus infection?
A. Although there is no specific treatment, medication or cure, the symptoms and complications of the disease can be treated. Most people who get this illness recover from it. In severe cases, which involve encephalitis, intensive supportive therapy is required. This often includes hospitalization, intravenous fluids, airway management, respiratory support (ventilator), prevention of secondary infections (pneumonia, urinary tract, etc.), and good nursing care.

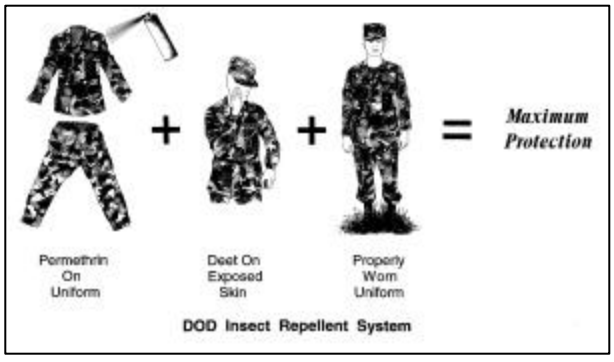
Q. Can you get infected by West Nile virus more than once?
A. It appears that once a person has been infected with WNV, a natural immunity develops that will be lifelong. However, this protective immunity may wane in later years.

Q. Is there a vaccine against West Nile encephalitis?
A. A human vaccine is not available, although several companies are working to develop one. In August 2001, the U.S. Department of Agriculture issued a conditional one-year license for an equine (horse) vaccine to Fort Dodge Animal Health.

Q. What can I do to reduce my risk of becoming infected with West Nile virus?
A.
- Stay indoors at dawn, dusk, and early evening. This is when the primary mosquito vector is most active.
- Wear long-sleeved shirt, long pants, and socks whenever you are outdoors; wear loose-fitting clothing to prevent mosquito bites through thin fabric.
- Use insect repellents that have been approved by the Environmental Protection Agency (EPA). They are safe and effective.
    - For your skin, use a product that contains 20-50% **DEET** (N,N-diethyl-meta-toluamide). **DEET** in higher concentrations is no more effective.
    - Use **DEET** sparingly on children, and don't apply to their hands, which they often place in their eyes and mouths.
    - Apply **DEET** lightly and evenly to exposed skin; do not use underneath clothing. Avoid contact with eyes, lips, and broken or irritated skin.
    - To apply to your face, first dispense a small amount of **DEET** onto your hands and then carefully spread a thin layer.
    - Do not inhale aerosol formulations.
    - Wash **DEET** off when your exposure to mosquitoes ceases.
    - For your clothing, use an insect repellent spray to help prevent bites through the fabric. Use a product that contains either **permethrin** or **DEET**. **Permethrin** is available commercially as 0.5% spray formulations.
    - **Permethrin** should only be used on clothing; never on skin.
    - When using any insect repellent, always FOLLOW LABEL DIRECTIONS.
    - For optimum protection, soldiers should utilize the **DOD INSECT REPELLENT SYSTEM**. In addition to proper wear of the battle dress uniform (BDUs), which provides a physical barrier to insects, this system includes the concurrent use of both skin and clothing repellents:

Standard military skin repellent: 33% **DEET**, long-acting formulation, one application lasts up to 12 hours, **NSN 6840-01-284-3982**.

Standard military clothing repellents, either: aerosol spray, 0.5% **permethrin**, one application lasts through 5-6 washes, **NSN 6840-01-278-1336**; or impregnation kit, 40% **permethrin**, one application lasts the life of the uniform, **NSN 6840-01-345-0237**.



- Eliminate mosquito-breeding sites by emptying water from birdbaths, old tires, and other outdoor containers or debris.
- Make sure that door and window screens do not have holes.
- Vitamin B, ultrasonic devices, and 'bug zappers' are NOT effective in preventing mosquito bites.

Q. Where can I get more information on West Nile and other forms of mosquito-borne viral encephalitis?
A. Contact the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), Entomological Sciences Program, Aberdeen Proving Ground, Maryland 21010-5403: DSN 584-3613; CM (410) 436-3613; FAX – 2037; http://chppm-www.apgea.army.mil/ento.

Much of the information contained in this fact sheet was obtained from the U.S. Centers for Disease Control and Prevention (CDC): http://www.cdc.gov/ncidod/dvbid/westnile/index.htm. The information in this fact sheet is intended as guidance only. Additional information can also be obtained from your local, county, or state health departments, or your health care provider.